

Strategic Plan Summary

The technological and environmental changes affecting Hawk Mountain Sanctuary offer multiple opportunities for restructuring, re- focusing and wider effectiveness. Indeed, unless we restructure and re-focus, we will lose our present level of effectiveness and cede leadership in raptor preservation to others. Desiring to continue and expand HMS's historic leadership role, the goals and objectives for the next five years are:

- Be the recognized leader in monitoring North American raptor populations, with the purpose of using the monitoring results to identify and promote critical conservation initiatives.
- Promote raptor conservation and support international raptor monitoring by becoming the leader in establishing new watch sites in Latin America and in training Central and South American ornithologists to establish monitoring, conservation and education programs.
- Improve the visitor experience at the Sanctuary, both to educate the first-time visitor and to maintain the loyalty of serious hawkwatchers. Use the Sanctuary to increase visitors' understanding of Appalachian ecology.
- Protect the Sanctuary heritage as a natural wild place with spectacular views over relatively unspoiled countryside and maintain the Sanctuary as a first class facility.
- Remain a good neighbor both for the surrounding communities and as an important part of the Appalachian ecology.
- Conduct programs and achieve leadership through active cooperation with other organizations so that our efforts are multiplied.
- Remain financially sound and recognize that our volunteers and members are constituencies that are important to the long-range success of our mission.

Integration of Programs

Typically, research is the foundation for the identification of conservation issues, which, in turn, are addressed through a variety of means, including education and training. Recognizing that, the proposed initiatives of the long-range plan are not defined by the traditional boundaries of research, conservation and education. Most combine research, conservation and educational components that must be fully integrated for the initiative to succeed. The proposed initiatives are:

Raptor Monitoring

- Establish a Western Hemisphere raptor monitoring program, collecting and
- analyzing new migration data, plotting trends, etc.
- Encourage and coordinate with Latin American monitoring sites
- Computerize and analyze historical HMNA database
- Complete and update Hawks Aloft Worldwide
- Bring researchers to Hawk Mountain to use database

Hawk Mountain Sanctuary

Hemispheric Raptor Conservation

- Establish a closer working relationship with Veracruz, Mexico
- Use Veracruz as a model to establish other monitoring, conservation and education sites in Latin America
- Supply training to new site personnel
- Provide educational material for adaptation by new sites

Visitor Experience

- Add and expand lookouts and change trail configuration.
- Increase lookout and trailside education
- Use live raptors effectively as part of the visitor experience

Educational Outreach

- Enhance on-site education
- Focus on and expand electronic outreach
- Reduce off-site programs on selective basis
- Use and display satellite tracking technology
- Expand training and exchange of international interns
- Integrate with other HMS programs, e.g., kestrel boxes, monitoring program, Hawks Aloft, Appalachian ecology

Land Protection/Appalachian ecology

- Complete the ongoing biological inventory
- Develop a comprehensive land-use plan
- Work proactively with other conservation groups to protect the viewshed

Facilities

- Expand facilities as necessary for expanded leadership role
- Provide a careful analysis of options by special Board committee.
- Maintain current facilities in good condition.

Development

- Enlarge function to raise money needed for new programs.
- Increase emphasis on planned giving
- Expand relationships with foundations and corporations

Volunteers

- Promote even greater use of volunteers
- Design additional ways to recognize and reward volunteers
- Expand ways of communicating to and hearing from volunteers

Project Narrative

1. Project Design: Describe Project and the overall goals

Hawk Mountain Sanctuary proposes to develop an online learning center for one of the world's most inspirational wildlife spectacles: birds of prey and their annual migrations. The center will serve as an in-depth guide to Hawk Mountain's own thousand-bird migration. The online learning center will present specific information for all 16 species, from the bald eagle to American Kestrel, that fly south across its ridgetops each autumn. It will offer content on bird biology and identification particularly relevant to migration and conservation. All content will be scientifically sound and will allow users to explore knowledge levels from introductory to the advanced.

The online learning center will use animation, film clips, interactive features and other technology to illustrate and explain the amazing long-distance flights and navigational feats of hawks, eagles, and falcons, one of the most charismatic of all forms of wildlife. Currently our ability to teach this phenomenon is limited by our relatively static HTML website. New technology offers the ability to use animated sequences and complex graphics, as well as to incorporate events and react to user input that will make for learning that is more fun and effective.

We plan to use a combination of movement, text and graphics to illustrate the special adaptations and flight anatomy of different hawks. Interactive programming will allow visitors to participate in demonstrations of the phenomenon. For example, web visitors will "test fly" different species of raptors in different habitats, weather, and wind conditions. The exercise will enable hands-on learning on why the short, rounded wings and long tail of the Cooper's and Sharp-shinned Hawks allow rapid flight and deft movement to pursue flying prey in a forest. Animation will be used to explain the effects of weather and geography on migration. Flash animation and film clips will show what a raptor is and show each defining physical feature of the group-keen vision, sharp beak and hooked talons-in action.

Another area where the website will let us fill an as yet unmet educational need for our visitors is that of raptor identification. Outside of extended time in the field, educators believe there is no better way to teach how to identify flying raptors than by using video. Learning identification usually involves a steep learning curve that can discourage novices, yet it is an essential step to advance knowledge and interest.

The learning center will present scientifically sound information on migration, starting from the zero-base knowledge-level of the first-time visitor, and eventually progress to the latest scholarship as scientists share their work and data in first-hand reports, and read scientific papers linked to the site. Content development will also offer an opportunity to explain Hawk Mountain's own unfolding research and monitoring of birds of prey, engaging virtual visitors in the compelling process of science in the making.

We believe this project presents a comprehensive, compelling and practical approach to engage learners in the natural sciences through one of its most popular forms of wildlife, birds of prey. This project will enrich the Hawk Mountain visitors, by serving as preparation, follow-up, and on-site guide to wild birds of prey and the Sanctuary's indoor exhibits, enriching visitor experience by adding the possibility of a fuller understanding of raptors and their migrations before, during and after their visit to this world-class site.

We also propose to install a touch-screen kiosk to connect the museum to the online learning center and to provide on-site visitors access to portions of the educational lessons, such as the identification of flying raptors.

The major goal of the online learning center is to fully use our website as an education resource for visitors to add to their knowledge about birds of prey and prepare them to appreciate and understand the world of raptors and raptor migration as experienced firsthand at Hawk Mountain. Goals include:

- Offering a proved learning method to teach raptor identification.
- Providing accessible information about the latest science and news on the migration of birds of prey and their conservation, including Hawk Mountain's own ongoing research efforts.
- Offering a basic guide to the biology of raptors that is relevant to migration, including feeding and flight strategies on-route, how fast and high the birds fly, how far they travel each day, and how they navigate from the nest to wintering areas and back each year.
- Using raptors as charismatic umbrella species to teach broader ecological principles and natural-resource conservation.
- Creating an effective, web-based learning center that clearly states each learning objective, summarizes content and tests content retention in a nurturing rather than overly pedantic approach.
- Connecting the virtual museum to the Sanctuary Visitor Center gallery by installing a large-format, touch-screen kiosk
- Providing an alternate site for low-speed Internet users that use smaller animation files or straight illustration to meet a broad range of users and to ensure long-term educational impact.

Specific Outcomes

- Develop 16 profiles on birds of prey that use film clips to assist in their identification, their flight mechanics and report real science that shares the latest scholarship and tells compelling conservation stories. Integrate this with a comprehensive guide to raptor migration and flight that uses new technology such as three-dimensional imaging to demonstrate navigation, geography, topography, impacts of weather, urbanization, landscape and more.
- Increase visitor knowledge about raptors by providing an engaging site that stimulates learning and tests retention. We will work directly with IMLS on an assessment plan if our request is granted.

Indicators:

- Increase visitor understanding of raptors as measured by online and Visitor Center kiosk exercises.
- Increase exposure to information about birds of prey as measured by increase in overall web site visits and visits to online learning center

Target for Change:

- Minimum 50% increase in website visits in its first full year. Currently our annual unique visitors total 148,000. This would increase that number by 200,000 in 2007.

To help us evaluate the learning center, reading and comprehension exercises will be included. At various stages of the development process, pilot pages will be tested with appropriate audience groups to incorporate feedback and solicit suggestions.

2. Grant Program Goals: Supporting Lifelong Education

This project strongly supports lifelong learning by providing a dynamic, online learning center that will offer information on birds of prey at introductory, intermediate and advanced knowledge levels, reflecting the needs of Hawk Mountain's diverse audience. As large, evocative birds, raptors have wide appeal that transcends age, education and socio-economic status. At the tops of food chains, raptors are ideal ambassador species to teach broad ecological principles and natural-resource conservation.

The learning center will provide scientifically sound, up-to-date information in a compelling format. Not a book, it will rather be a dynamic, living guide to birds of prey, using visual elements to lead readers into an in-depth exploration of fascinating and complex concepts. The content will serve Hawk Mountain visitors who are inspired to learn more about raptors and nature before, during and after witnessing the migration. A touch-screen kiosk in the Visitor Center will give first-time visitors access to parts of the online learning center, and invite further exploration of this resource on their return home.

3. How the Project Fits into Strategic Plan and Mission

A state-of-the-art, online learning center will advance the Sanctuary's ability to carry out its stated mission to "foster the conservation of birds of prey worldwide and create a better understanding of the natural environment... through programs in research, education, and sanctuary management." It will also fulfill specific goals of the plan including "improvement of the visitor experience at the Sanctuary," and specifically, as stated in education, to "focus on and expand electronic outreach."

Our website was totally revamped in 2001, but only previously-existing content was used for an "education section." New content development, in terms of information about raptors, is the major goal for the 2004 two-year plan for Education.

The online learning center will integrate existing Hawk Mountain resources, including popular and technical publications and exhibits. It will allow us to share our specialized knowledge about raptors and migration in a compelling and engaging manner. The project will build our institutional capacity by building skills and teamwork in our communications (website and project management), education (effective use of this new media in a "wow" approach to teaching), and research (empowered by the ability to have public impact). We will work with a local professional web-designer who is also a gifted illustrator.

It also will build capacity in the use of new technology for our communications department and our organization.

At the same time, this project will fulfill a priority objective in the Sanctuary's two-year education strategic plan: "to develop a web-based raptor migration interpretive curriculum for visitors."

The project will have a long-term impact after IMLS project ends because it focuses on the 16 species of birds of prey that form the nucleus of Hawk Mountain's "permanent collection."

Project output will set a standard for the future, requiring updates of new scholarship. Fortunately, Hawk Mountain's own thriving research program and the growing number of associate researchers at the Sanctuary's recently completed new biological field station and research center allows close-at-hand access to exciting fieldwork.

4. Strategic Plan: Process and Financial Resources

Our current long-range plan was adopted by the board of directors in November 1997. Work on the plan began in 1996 when the long-range planning committee (LRP) (including 4 members of the board and the executive director) asked staff and board members to assess the Sanctuary's mission statement. An open discussion followed at a full board meeting and a written report summarized views and opinions on the variety of futures open to HMS. In January 1997, the chair of the LRP and staff met with 15 volunteers to gather input on the future direction of the Sanctuary. Senior staff then submitted environmental scans and overall goals. The LRP interviewed a dozen environmental education leaders, raptor researchers, bird conservationists and donors to gather outside perspectives on Hawk Mountain's strengths and weaknesses, future direction, and changes in the environment. The committee also considered a report by a 1994 National Science Foundation panel of 12 scientists that assessed HMS's role and capabilities as a nationally significant field station. After careful deliberation, the LRP then determined strategic priorities.

In July 1997, the LRP committee recommended the mission statement be revised slightly to emphasize the priority given to raptor conservation issues and the international aspects of those issues. The board gave their approval. With the revised mission statement in place, the LRP, working with the senior staff, formulated initiatives. The board then adopted the current strategic plan in November of that year.

Since the plan was adopted, we have met or made substantial progress on 25 of 30 objectives. Annually, the Executive Director with the Executive Committee allocates financial resources in terms of organizational goals and annual plans.

A large-scale member survey conducted in 1997 has been used as a tool to guide annual plans and the small, intimate nature of the Sanctuary encourages an atmosphere of honest dialogue from visitors that allows us to continually improve programs and interpretation.

The long-range plan recognizes the need to build fund-raising capacity for long-term financial stability. An additional position was added in 2001 and the positions restructured to allow the Director of Development greater focus on individual giving.

An active board Development Committee supports, helps implement and evaluate institutional fund-raising.

The board of directors is currently considering updating the new long-range plan.

5. Appropriateness of Project for Institution and Audience

The intended audience for this project is the Hawk Mountain visitor. As a world-renowned migration site and scenic natural area, the Mountain draws local to international visitors, representing all socio-economic classes and age groups. The Sanctuary has a national profile as a conservation and information center for birds of prey and is considered a significant historical landmark in the American conservation movement. Its virtual visitorship is twice its on-site visitorship.

The Sanctuary is located 28 miles north of Reading (pop: 78,000) and 32 miles west of Allentown (pop: 104,000) in southeastern Pennsylvania. To the north is Schuylkill County, an economically depressed region of Appalachia (avg. household income= \$27,000). East and south are more urbanized Berks and Lehigh counties (avg. household income=\$36,000). We are within a half-day's drive for 25 million people on the East Coast, including the New York-Philadelphia-Washington, DC corridor.

We know that seventy percent of onsite visitors come from within the state. Twenty percent are under age 18; 24%, ages 18-34; 31 %, ages 35-49; 17%, ages 50-64; and 7%, 65+. About 25% visit in family groups. Thirty percent list household incomes under \$40,000. Forty percent have 4-year degrees; 30% have graduate degrees. Approximately 4% are African-

American, Latino, or Asian compared to local minority populations of 1 % (Schuylkill County) and 4% (Berks County).

Annual attendance has averaged 70,000 during the past 10 years. Our audience ranges from local Appalachia schoolchildren to highly educated, sophisticated urbanite adults from Philadelphia and New York. We know from surveys that one-third do not consider themselves birdwatchers, one-third describe themselves as novice birdwatchers and one-third, as intermediate or expert birdwatchers. Our content for the web site will be addressed in a multi-level approach for these three different audiences.

The Sanctuary has conducted both formal and informal assessments of visitor needs at various times, including during the 1997 professional survey, member services evaluation surveys and feedback on site and from our website. More than 660 visitors were asked, "What questions did you leave Hawk Mountain with that you wish you could have answered. The most popular request has been for help in learning how to identify raptors; the second most popular request was for more information on the birds themselves. Website visitors have repeatedly asked for more photographs of raptors on the website.

Sanctuary staff agree that web-based, digital media is ideal for teaching the complex phenomenon of bird migration. It has the illustrative capacity to demonstrate interactions of birds of prey with physical features of the landscape and the forces of wind and weather, all of which impact migration and migration strategies. It can capture the flight of moving birds and demonstrate abstract natural phenomena. In addition, the web allows visitors to explore this topic in depth at their own pace and convenience.

6. Project Resources: Time and Budget

Months 1 to 6: **Research and Design.** The director of conservation science, two education specialists, the public information specialist and the consultant will research, develop a plan, and storyboard the online learning center during the first six months. Front-end activities during this time include research and content development, scheduled specifically for the Sanctuary's off-peak season when staff typically takes on new projects. The public information specialist will incorporate ongoing public relations and outreach needs with project needs, for example, taking video as well as still photographs during her regular assignments to cover staff research work.

Months 4 to 8: **Content Development.** The public information specialist will begin to identify and acquire the illustrative, photos and video resources needed. The public information specialist will serve as the liaison with the consultant.

Months 4 to 12: **Learning Center Construction.** Construction of portions of the site will begin in Month 4. In Month 6, one month will be scheduled for each major component, for example: raptor ID; migration; raptor biology; conservation and research; outcome-based learning quizzes; and building the alternate learning center for those users with no graphic capabilities.

Months 6 to 12: **Testing, Implementation, and Review.** Upon completion, each component will be reviewed, edited and then tested online by a focus group that includes users at all three skill levels. Feedback will be incorporated into final edits.

Months 13 to 15: **Evaluation.** The site will be completed by December 2006, allowing final evaluation by staff and focus group.

Month 15: **Implement On-Site Enhancements.** Installation of the museum kiosk will take place by February 2006.

Month 16: **Project Completion.** This project will be completed for the Sanctuary's spring season, March 2006.

Most of the resources acquired for this job will have a long-shelf life and so represent a worthwhile and lasting investment. By paying the one-time costs to work with a skilled web designer, and to purchase rights to video and high-quality photos, the Sanctuary will save long-term resources. Regular updates will be included in future communications budget, and will not be as costly to add after the up-front design is completed.

7. Project Resources: Personnel and Technology

Content will be developed by the education specialists, both of whom are experienced in curricula development. The Director of Conservation Science, who will review all content, holds a Ph.D.-level in zoology and is world known for his expertise on raptor biology and conservation. As a former college professor, he oversees the education department and his deep knowledge and the ability to bring the latest research into education programs will help our website meet a new standard of content.

The Public Information Specialist, who will serve as Project Manager is well versed in writing science for the public and project coordination.

A uniquely qualified web designer, Black Lab Designs, will serve as consultant. This consultant is intimately familiar with Hawk Mountain Sanctuary, the biology of birds of prey, the phenomena of migration, is the designer of the organization's current website and eager to serve on this project. The Black Lab Design president is also a trained illustrator, allowing him to provide natural history illustration for animation on the website.

Budget Justification

Salaries and Wages

During the first six months of the project, both Education Specialists will spend half of their time researching, designing and developing content for the online learning center (resumes of both attached).

The Public Information Specialist will spend one day each week coordinating and implementing the project, including to meeting with all participants and assembling needed components according to plan. The Public Information Specialist will incorporate her duties as Project Coordinator into her usual public relations duties, overlapping where possible (resume attached).

The Director of Conservation Science will provide input, and thereafter review and edit the overall storyboard as well as each completed section of the online learning center (resume attached).

Consultant Fees

Web developer Black Lab Designs, Kutztown, P A, is scheduled to spend 40 hours per month for 15 months. At \$80 per hour, the consultant cost is estimated at \$48,000 for the completed online learning center. Black Lab Designs will provide web construction, illustration and information technology services. The job will include constructing the user interface and all coincident programming, creating alternate website for narrow-band users, integrating the learning center with the current website and interfacing closely with Hawk Mountain staff. As IT consultant, Black Lab Designs will act as general webmaster to upload segments of the learning center for testing, manage the application to the server, and interface with the internet service provider. This consultant was selected specifically for its ability to offer a unique product (the combination of web construction, illustration and IT experience), its established relationship with Hawk Mountain and its familiarity with Hawk Mountain website. The Sanctuary will work primarily with president Ken Hochberg (resume attached) and his partner Covero Consulting, developer of Adobe Acrobat software (resume is attached).

Indirect Costs

Indirect costs represent 15% of the requested funds.

Travel

Travel includes weekly meetings with the web developer and project manager to ensure the project continues to move on schedule with full dialog. Cost is based on travel between Hawk Mountain Sanctuary and nearby Kutztown, four-40 mile round trips @ .30 cents per mile. During the first year, this cost computes to 48 trips; in year two, it computes to 12.

Hawk Mountain Sanctuary

Materials

An estimated 64 photos will be purchased for use on website and in Visitor Center kiosk at average rate of \$100 per photo.

The Visitor Center kiosk price is the list price for a KIS KT -125 touch-screen kiosk. Cost includes installation and hardwiring, maintenance and setup. The Sanctuary will again review vendors at the time of purchase, scheduled for 2006.

A digital camcorder is needed to allow direct film-to-web conversions. This type of technology is not available with a standard camcorder or other recording device without a costly film to digital conversion cost. This digital purchase also will enable the Sanctuary to record spur-of-the-moment, on-site research projects to ensure efficient and cost-saving production of the Online Learning Center.

Computer hardware and software needs include a high-speed, multimedia-designed PC (\$1,500) and the purchase of Adobe Premiere Pro (\$699) to edit digital film and Macromedia Studio (\$899) to edit Flash animation, Dreamweaver and Fireworks files. The new workstation and software will be purchased and installed for the Public Information Specialist to ensure all raw digital files will be installed and efficiently edited on site, both during the project construction and review, and after project completion.

Services

Web hosting will be upgraded to a dedicated off site server managed by an Internet Service Provider at a cost of \$200 per month. This service is essential to ensure smooth Internet service and hosting for the increased size of the site and to allow for future growth without a technology burden to the organization. Web hosting will be upgraded in conjunction with review and editing. After project completion, this cost will be sustained through Online Learning Center annual sponsor.

Digital imagery of raptors in flight is readily available from wildlife photographer Ron Austing. The footage has been reviewed by Hawk Mountain staff and rated the best and only of its kind, to show close-up detail of raptors in flight. The cost for this item was negotiated with Austing to include unlimited rights to the entire film and to use any portion of the film within the online learning center or the Visitor Center kiosk.

We need to work with scientists in the field to provide basic data. Scientists will need to prepare their findings, published and unpublished, including charts, maps, equipment and field photos. Essentially, this service represents the rights to use their independent research findings and is described as such in the budget. This information will be used to the online learning center to provide information about on the latest research in the field. This fee is based on individual negotiation. The amount of \$10,000 will allow us to work with the most talented scientists in the field.